

LISTING OF CLAIMS:

1. (Currently amended) A high strength, heat resistant alloy for exhaust valves with good overaging-resistance, which has an alloy composition essentially consisting of, by weight %, C: 0.01-0.2 %, Si: up to 1.0 %, Mn: up to 1.0 %, P: up to 0.02 %, S: up to 0.01 %, Ni: 39.9-62%, Cr: 13-20 %, W: 0.01-3.00 %, Mo: up to 2.0 %, provided that Mo+0.5W: 1.0-2.5 %, Al: 0.7 % or higher and less than 1.6 %, Ti: 1.5-3.0 %, Nb: 0.5-1.5 %, B: 0.001-0.010 %, provided that (%Ti)/(%Al): 1.6 or more to less than 2.0, and Fe: 20.6-45.2 % and inevitable impurities;

wherein the alloy has at least three properties selected from the group consisting of:

a room temperature tensile strength from ~~1273~~ 1237 to 1295 MPa,

hot processibility at a temperature range of 250 to 300°C,

a Rockwell hardness from 32.3 to 37.8 HRC after solution treatment,

a tensile strength at 800°C from 492 to 716 MPa, and

a rotating bending fatigue from 283 to 330 MPa.

2. (original) The heat resistant alloy for exhaust valves according to claim 1, wherein the alloy further contains at least one of the group consisting of Mg: 0.001-0.030 %, Ca: 0.001-0.030 % and Zr: 0.001-0.100 %.

3. (original) The heat resistant alloy for exhaust valves according to claim 1, wherein the alloy further contains Cu: up to 2.0 %.

4. (original) The heat resistant alloy for exhaust valves according to claim 1, wherein the alloy further contains V: 0.05-1.00%.
5. (original) The heat resistant alloy for exhaust valves according to claim 1, wherein the alloy further contains Cu: up to 2.0 % and V: 0.05-1.00 %.
6. (original) The heat resistant alloy for exhaust valves according to claim 2, wherein the alloy further contains Cu: up to 2.0 %.
7. (previously presented) The heat resistant alloy for exhaust valves according to claim 2, wherein the alloy further contains V: 0.05-1.00 %.
8. (previously presented) The heat resistant alloy for exhaust valves according to claim 2, wherein the alloy further contains Cu: up to 2.0 % and V: 0.05-1.00 %.
9. (previously presented) The heat resistant alloy for exhaust valves according to claim 1, wherein the alloy has a composition in which a portion of Ni is replaced with Co in an amount of up to 5 % of the alloy.
10. (previously presented) The heat resistant alloy for exhaust valves according to claim 1, wherein the alloy has a composition in which whole or a portion of Nb is replaced with Ta.

11. (previously presented) The heat resistant alloy for exhaust valves according to claim 1, wherein the alloy has a composition in which a portion of Ni is replaced with Co in an amount of up to 5 % of the alloy and whole or a portion of Nb is replaced with Ta.

12. (previously presented) The heat resistant alloy for exhaust valves according to claim 2, wherein the alloy has a composition in which a portion of Ni is replaced with Co in an amount of up to 5 % of the alloy.

13. (previously presented) The heat resistant alloy for exhaust valves according to claim 3, wherein the alloy has a composition in which a portion of Ni is replaced with Co in an amount of up to 5 % of the alloy.

14. (previously presented) The heat resistant alloy for exhaust valves according to claim 4, wherein the alloy has a composition in which a portion of Ni is replaced with Co in an amount of up to 5 % of the alloy.

15. (previously presented) The heat resistant alloy for exhaust valves according to claim 2, wherein the alloy has a composition in which whole or a portion of Nb is replaced with Ta.

16. (previously presented) The heat resistant alloy for exhaust valves according to claim 3, wherein the alloy has a composition in which whole or a portion of Nb is replaced with Ta.

17. (previously presented) The heat resistant alloy for exhaust valves according to claim 4, wherein the alloy has a composition in which whole or a portion of Nb is replaced with Ta.

18. (previously presented) The heat resistant alloy for exhaust valves according to claim 2, wherein the alloy has a composition in which a portion of Ni is replaced with Co in an amount of up to 5 % of the alloy and whole or a portion of Nb is replaced with Ta.

19. (previously presented) The heat resistant alloy for exhaust valves according to claim 3, wherein the alloy has a composition in which a portion of Ni is replaced with Co in an amount of up to 5 % of the alloy and whole or a portion of Nb is replaced with Ta.

20. (previously presented) The heat resistant alloy for exhaust valves according to claim 4, wherein the alloy has a composition in which a portion of Ni is replaced with Co in an amount of up to 5 % of the alloy and whole or a portion of Nb is replaced with Ta.

21. (Currently amended) A high strength, heat resistant alloy for exhaust valves with good overaging-resistance, which has an alloy composition essentially consisting of, by weight %, C: 0.01-0.2 %, Si: up to 1.0 %, Mn: up to 1.0 %, P: up to 0.02 %, S: up to 0.01 %, Ni: 39.9-62%, Cr: 13-20 %, W: 0.01-3.00 %, Mo: up to 2.0 %, provided that Mo+0.5W: 1.0-2.5 %, Al: 0.7 % or higher and less than 1.6 %, Ti: 1.5-3.0 %, Nb: 0.5-1.5 %, B: 0.001-0.010 %, provided that (%Ti)/(%Al): 1.6 or more to less than 2.0, and the balance Fe, where the balance Fe includes 20.6% or more Fe, and inevitable impurities;

wherein the alloy has at least three properties selected from the group consisting of:

- a room temperature tensile strength from ~~1273~~ 1237 to 1295 MPa,
- hot processibility at a temperature range of 250 to 300°C,
- a Rockwell hardness from 32.3 to 37.8 HRC after solution treatment,
- a tensile strength at 800°C from 492 to 716 MPa, and
- a rotating bending fatigue from 283 to 330 MPa.